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VASCULAR DISEASE

ABNORMAL CORONARY VASOMOTION IN PATIENTS WITH UNOBSTRUCTED CORONARY ARTERIES IS ASSOCIATED WITH BIOMARKERS OF INFLAMMATION, ENDOTHELIAL FUNCTION AND PLATELET ACTIVATION

ACC Poster Contributions
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Background: Patients with typical angina despite unobstructed coronary arteries represent a diagnostic and therapeutic challenge. Endothelial dysfunction leading to abnormal vasomotion has been suggested to be a pathogenic mechanism. However, this has not been systematically investigated. We assessed the relationship between abnormal coronary vasomotion during intracoronary acetylcholine testing (ACH-test) and biomarkers of inflammation, endothelial dysfunction and platelet activation (hs-CRP, e-selectin, neopterin, soluble CD40ligand).

Methods and Results: 39 consecutive angina patients with unobstructed coronary arteries on diagnostic angiography (no stenosis >50%, 22 men, mean age 60±9 years) were prospectively enrolled. The ACH-test was considered 'positive' (a) in the presence of reproduction of the patient's symptoms and epicardial coronary diameter reduction >75%, compared to the relaxed state following nitroglycerine infusion or (b) when typical ischemic ST-shifts and angina developed even in the absence of epicardial vasoconstriction (microvascular spasm). The ACH-test was positive in 29 patients (74%) and negative in 10 (26%). On univariate analysis, a family history of cardiovascular disease ($p<0.01$), elevated hs-CRP, e-selectin and sCD40ligand ($p<0.04$) were associated with a positive ACH-test. After adjustment for age, gender, cardiovascular risk factors and biomarker concentrations, multivariate analysis revealed that a family history of cardiovascular disease and increased sCD40ligand levels were independent predictors for an abnormal ACH-test ($p=0.035$, $p=0.037$).

Conclusion: Abnormal coronary vasomotion leading to angina in patients with angiographically unobstructed coronary arteries correlates significantly with markers of inflammation. Elevated sCD40ligand concentrations and a family history of cardiovascular disease are independent predictors for a positive ACH-test. These results indicate that inflammation and platelet activation are likely to contribute to excessive coronary vasoconstriction that may lead to angina in these patients.